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Katharina Vones

Symbiotic Microcosms: Crafting
Digital Interaction



Symbiotic Microcosms - Crafting Digital Interaction

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Abstract

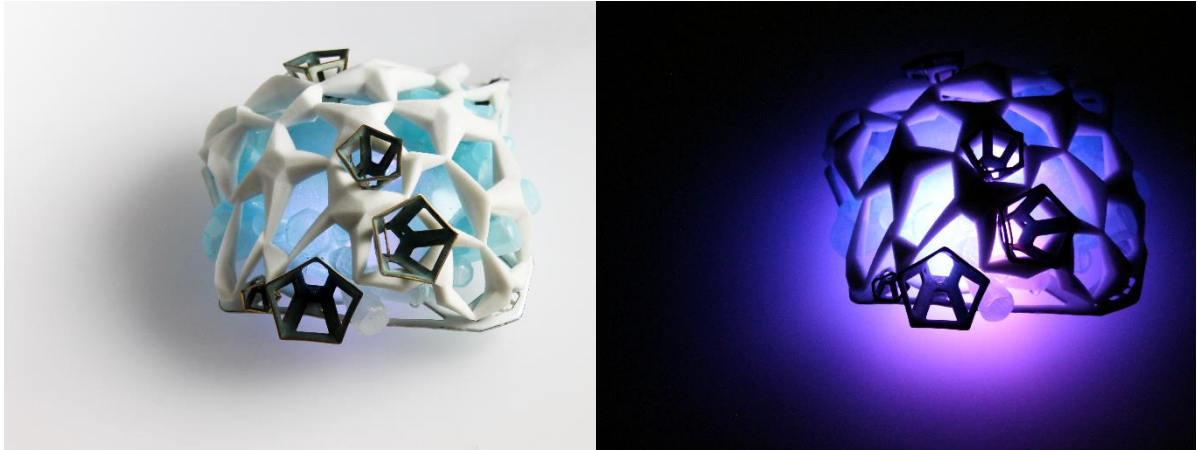
This practice-led research explores how smart materials, and in particular thermochromic silicone, can be integrated into a wearable object in combination with microelectronics to create aesthetically coherent stimulus-reactive jewellery. Bringing together digital methods of fabrication with craft methodologies to create objects that respond intimately to changes in the body of the wearer and the environment is presented as an outcome of this research project. The works offered for exhibition explore different aspects of this goal, introducing the concept of generating digital enchantment through playful interaction, as well as exploring the possibilities offered by layering thermochromic pigments to achieve striking visual transitions (Vones, 2015).

The questions posed to the contemporary craft practitioner regarding the creation of a more refined interaction between the digitally enhanced object and its wearer have become progressively more prominent in the applied arts (Wallace, 2007). Through examining the notion that human biology is a part of material culture, where the body can be shaped, customised or altered through surgical intervention and scientific innovation, this research project explores how recent developments in material science and wearable technologies can be viewed as moving towards a future embracing the posthuman body, bridging the gap between craft practitioner and scientific discovery (Hayles, 1999). Through engaging in a holistic process of material immersion and experimentation I have developed a body of work that is emotionally resonant while leaving space for serendipitous discovery. The rise of creative technologists represents a new breed of studio artist (Miodownik, 2009), equipped to contribute to the debate surrounding the role of the practitioner in an age defined by digital revolution and material discovery. Against a background of growing fascination with and reliance upon technologies and devices that contain some form of interactivity, my research provides an essential part of developing a discourse on the place symbiotic jewellery and the contemporary craft practitioner occupy within this setting.

Smart Materials; Jewellery; Craft; 3D Printing, Posthuman, Microelectronics

Exhibits

The first work included in the exhibition is the Geotronic Brooch, which contains a light source (Fig. 1) that pulsates in tandem with the human heartbeat, creating the impression of a live organism thriving on the body of the wearer. While conceived as a piece that would immediately react to the wearer's heartbeat as measured by a pulse sensor and translate this into a light output (Vones, 2013), for the purpose of exhibition it has been fitted with a programmable LED that simulates the conditions of being worn on the body (Fig. 2).



Figures 1&2: The Geotronic Brooch (2012)

Following on from this, the Hyperhive Pendant and Cocoon Necklace explore the aesthetic possibilities offered by thermochromic silicone. The Hyperhive Pendant (Fig.3) is based on observing the way in which crystalline growth forms on exposed surfaces in natural environments. A large geometric structure 3-D printed from flexible rubber substrate has become colonised by soft, brightly coloured silicone shapes that seem to burst out of calcified mineral growth. The silicone is infused with thermochromic pigments, changing from a pale orange to a bright raspberry pink as the environmental temperature changes. When not worn, the piece is displayed on a custom designed stand, deepening the concept of a living, organic growth object.

The Cocoon Necklace (Fig.4) builds on the concept of crystalline growth developed in the Hyperhive Pendant and expands it to include the body as the carrier structure that appears to host organic 'jewellery growths'. The piece consists of oxidised sterling silver elements enclosing cocoon-like structures that have 3-D printed from flexible rubber substrate and treated with liquid crystal technology. Inside the cocoons, thermochromic silicone elements burst forth, changing from vibrant purple to pale blue as the environmental temperature rises. The cocoon structures cycle through a range of peacock hues as the liquid crystals are activated through body heat, infusing the piece with life as it is worn.

Moving towards the notion of a posthuman body, potential practical applications for these jewellery objects exist in the areas of human–computer interaction, transplant technology, identity management and artificial body modification, where such symbiotic jewellery organisms could be used to develop visually engaging, multifunctional enhancements.

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Author Biography

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Katharina is a practicing jewellery artist and digital craft researcher at the University of Dundee, currently in the final stages of completing an AHRC funded PhD on stimulus-reactive jewellery incorporating smart materials and microelectronics. Katharina has exhibited her work widely both nationally and internationally and actively blogs about her research and material explorations as a way to encourage craft practitioners to learn about and get involved in digital technologies: www.smart-jewellery.com and www.kvones.com